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ABSTRACT

Occasions where children oppose each other have been viewed as promoting intellectual development through their association with "transactive" dialogue. Yet such occasions have also been regarded as causing problems for social relations through their association with aggression. Although it is inconceivable that the intellectual and social consequences of opposition are themselves inter-related, existing research provides little basis for differentiation. All that is known is that aggression during opposition is related to gender and temperament. Whether transactive dialogue during opposition can be separated from aggression, and whether gender and temperament provide a basis for doing this remain to be seen. This study was designed to explore these issues in depth. The study focused on the videotaped interaction during free play and structured tasks of 49 triads comprising children ages 4 and 5 years, or 6 and 7 years. The children varied in gender and temperament (as ascertained from parental response scales), and the triads varied in gender composition (with sociometric status controlled). Consistent with other research, transactive dialogue and aggression were found to be relatively frequent during opposition. Nevertheless, they could be clearly separated within oppositional contexts, with age, temperament, gender, and triad gender composition all relevant to the form of opposition that occurred. (Author)

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OPPOSITION IN SOCIAL INTERACTION BETWEEN CHILDREN: INTELLECTUAL BENEFIT OR SOCIAL COST?

[Presentation to Biennial Meeting of Society for Research into Child Development, Tampa, Florida, April 2003]

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Abstract

Occasions where children oppose each other have been viewed as promoting intellectual development through their association with 'transactive' dialogue. Yet such occasions have also been regarded as causing problems for social relations through their association with aggression. Although it is inconceivable that the intellectual and social consequences of opposition are themselves inter-related, existing research provides little basis for differentiation. All that is known is that aggression during opposition is related to gender and temperament. Whether transactive dialogue during opposition can be separated from aggression, and whether gender and temperament provide a basis for doing this remain to be seen. The study that follows was designed to explore these issues in depth. The study focused on the videotaped interaction during free play and structured tasks of 49 triads comprising children aged 4;9 to 5;11, or 6;9 to 7;11. The children varied in gender and temperament (as ascertained from parental response scales), and the triads varied in gender composition (with socio-metric status controlled). Consistent with other research, transactive dialogue and aggression were found to be relatively frequent during opposition. Nevertheless, they could be clearly separated within oppositional contexts, with age, temperament, gender and triad gender composition all relevant to the form of opposition that occurred.

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Introduction

Opposition in social interaction between children has been regarded as providing key intellectual benefits (Howe & Tolmie, 1998; Kruger, 1993). This is by virtue of the justifications and attempts at resolution, i.e. transactive dialogue, that opposition typically triggers.

Opposition between children has also been treated as causing problems for social relations, due to its association with aggression (Arsenio & Lover, 1997; Shantz, 1986), and, via aggression, with socio-metrically measured rejection (Cillessen et al., 1992; Parke et al., 1997; Shantz, 1986).

Although the association of opposition with both intellectual growth and social rejection is empirically well-grounded, it is difficult to square with the known negative relation between intellectual growth and social rejection themselves (Newcomb et al., 1993).

Perhaps the solution lies in differentiation between opposition that involves transactive dialogue, and opposition that involves aggression, with individual differences between children in the extent to which they engage in each type of opposition.

Individual differences in aggression are known to depend upon:

- Gender (Archer & Lloyd, 1985; Maccoby & Jacklin, 1980), especially in same-sex groups (Howe, 1997);
- Temperament, especially anger and self-control (Caspi et al., 1995; Eisenberg et al., 1997).

Perhaps gender (with gender composition taken into account), and temperament provide the bases for individual differences over the use of transactive rather than aggressive opposition.

Research Questions

In view of the above, a three-stage study was conducted to ask:

- Can opposition between children be shown once more to trigger relatively high levels of transactive dialogue and aggression?
- Can the opposition that is associated with transactive dialogue be differentiated from the opposition that is associated with aggression, implying two forms of opposition?
- How do the two forms of opposition relate to child gender and temperament, and to the gender composition of the interacting group (taking socio-metric status into account)?

Method

Stage 1

111 Primary One (P1) children (aged 4;9 to 5;11, mean = 5;3), and 122 Primary Three (P3) children (aged 6;9 to 7;11, mean = 7;3) were photographed, and given questionnaires derived from Rothbart et al.'s (1994) Child Behavior Questionnaire (CBQ) to take home for parental completion. The questionnaires comprised:

- CBQ anger/frustration (A/F) scale to tap anger;
- CBQ inhibitory control (IC) and impulsivity (IM) scales to tap self-control;
- CBQ high pleasure and smiling/laughter scales to act as fillers.

133 (57%) questionnaires were returned, and scored following Rothbart et al.'s procedures to produce mean A/F, IC and IM scores for each child.

Stage 2

All 233 children were shown photographs of their class-mates taken during the first stage, and asked to nominate those who they liked, and did not like, to play with. Following Newcomb et al. (1993), nominations were used to classify children as 'popular', 'average' and 'rejected'. Children were assigned to triads, with socio-metric status controlled:

- 24 single-sex triads - 7 x three boys vs. 17 x three girls; 14 x P1 vs. 10 x P3;
- 25 mixed triads - 7 x two boys + one girl vs. 18 x two girls + one boy; 11 x P1 vs. 14 x P3.

Stage 3

Triads were videotaped while they engaged (for c. 20 minutes in total) in:

- Free-play with toys - soft football, toy coins and bank notes in a wallet, camera, beads with string for threading, plastic toolkit in a carrying case, 25 large-piece jigsaw, tea-set plus tray, plastic fruit plus knife in a basket;
- Limited toys task - play with hula-hoop, and cuddly pig (limited when two toys and three children);
- Robot task - decide the combination of shapes that would make a robot move its head, flash its eyes, and make a beeping noise;
- Story task - decide how to arrange five pictures (from a possible seven) so that they would tell a story.

Sessions began with free play; order of other tasks was counter-balanced.

Coding of Videotapes

Videotapes were transcribed and coded, with videotapes relating to 12 triads coded by two independent judges. Instances where one child responded verbally to the action or utterance of another child were identified (inter-judge agreement = 89%), and each identified instance (together with accompanying action) was categorised along three dimensions:

Opposition (Inter-judge agreement = 92%)

- Oppositional, e.g.'The rabbit's tower gets knocked down here, and then it's crying, and then that', 'No that's wrong', *or*
- Non-oppositional, e.g. 'I'm have the camera', 'Okay you have the camera too'.

Dialogue (Inter-judge agreement = 86%)

- Simple - repetition, agreement, disagreement, e.g. 'It's his chest', 'It's his chest', *or*
- Justificatory - giving or asking for reasons, e.g. 'It's learning to walk', 'Don't, he's only a baby', *or*
- Resolving - giving alternatives, compromises, e.g. 'No, red', 'No blue', 'You put the blue and I put the red in', *or*
- Extending - adding to the dialogue, but neither justificatory nor resolving, e.g. 'Ehm I'll have this', 'That's 49p'.

Non-codable utterances were noted, but not analysed due to rarity.

Action (Inter-judge agreement = 89%)

- Not accompanied by action, *or*
- Accompanied by non-aggressive action, e.g. 'Two bananas' (Lifts them out of the basket), 'Two bananas' (Points to them), 'Aye' (Pretends to eat), *or*
- Accompanied by aggressive action, e.g. (Stabs other child in back with drill), 'Ow. Ow', 'Did that hurt?' (Laughs sadistically and stabs again), 'Ouch give me that; you're done' (Tries to grab drill), 'No' (Pulls drill away).

Aggressive speech, e.g. 'You're a pig', 'You dumpling', 'You stink', was noted, but not analysed due to rarity.

Results 1: Opposition does trigger high levels of transaction and aggression

Analyses compared the proportions in oppositional contexts (c.25% of total responses) and non-oppositional contexts (c.75% of total responses) of:

- Simple, extended, justificatory, resolving dialogue;
- No action, non-aggressive action, aggressive action.

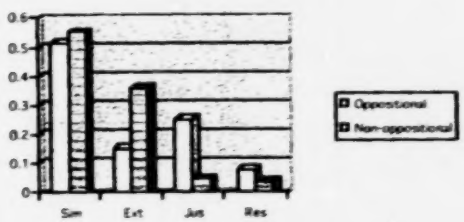
Data were corrected for the duration of each triad's recording in minutes, and summed across tasks (due to high cross-task correlation).

Dialogue

Analysis of the dialogue variables (Figure 1) revealed:

- No significant difference between oppositional and non-oppositional responses over simple (Sim) dialogue;
- Significantly more extended (Ext) dialogue with non-oppositional responses (F (1,143) = 105.04, $p < .001$);
- Significantly more justificatory (Jus) dialogue with oppositional responses (F (1,143) = 107.02, $p < .001$);
- Significantly more resolving (Res) dialogue with oppositional responses (F (1,143) = 8.85, $p < .01$).

Figure 1



There were no significant main effects of age on the proportional frequencies of the dialogue variables, and only one significant interaction between age and type of encounter: the difference between oppositional and non-oppositional responses over resolving dialogue was only significant for the P1 children (F (1,143) = 6.54, $p < .05$).

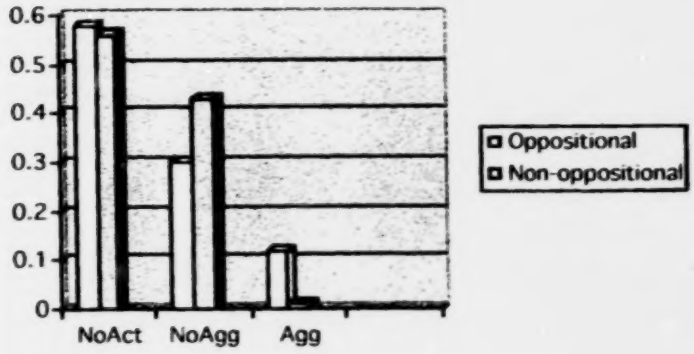
Action

Analysis of the action variables (Figure 2) revealed:

- No significant difference between oppositional and non-oppositional encounters over the frequency of responses without action (NoAct);

- Significantly more responses accompanied by non-aggressive action (NoAgg) in non-oppositional contexts (F (1,143) = 34.51, $p < .001$);
- Significantly more responses with aggressive action (Agg) during oppositional encounters (F (1,143) = 55.26, $p < .001$).

Figure 2



The frequency of responses without action increased with age (F (1,143) = 4.04, $p < .05$), and the frequency of responses with non-aggressive action decreased (F (1,143) = 6.53, $p < .05$). There were no changes with age in the frequency of aggressive responses.

Conclusion

When oppositional responses were nearly four times as likely to involve justification and resolution as non-oppositional, and nearly twelve times as likely to involve aggression, it can be concluded that opposition is associated with both transaction and aggression.

Results 2: Transactive opposition is strongly differentiated from aggressive opposition

Factors

Principal components factor analysis on the frequencies during opposition (with the age groups combined) of the four dialogue variables, and three action variables produced a simple two-factor solution after rotation (with no dual loadings). Together, the factors accounted for 67% of the variance:

- Factor 1 -> simple responses (loading = .85), extended responses (loading = .76), no action (loading = .82), aggressive action (loading = .70);
- Factor 2 -> justificatory responses (loading = .64), resolving responses (loading = .87), non-aggressive action (loading = .77).

The same factors emerged when the age groups were considered separately, accounting for 68% of the variance in both cases. However, justificatory responses loaded on Factor 1 (loading = .61) as well as Factor 2 (loading = .53) at the P1 level. There were no dual loadings with the P3 children, and no other dual loadings with the P1.

Conclusion

Two forms of opposition are discernible at both age levels, transactive opposition associated with justification and resolution, and non-transactive opposition associated with aggression.

Results 3: Age, temperament, gender, and gender composition are all relevant to the form that opposition takes

Transactive

Transactive opposition was most probable when children who were high in temperamental anger/frustration and high in inhibitory control interacted in single-sex

groups. Age, gender and impulsivity had no bearing upon transactive opposition, nor did socio-metric status:

- There was a significant main effect of gender composition on transactive opposition (F (1,139) = 5.60, $p < .05$): there was more transactive opposition in single-sex groups (M = 5.83, SD = 5.14) than mixed (M = 4.05, SD = 3.00);
- With the children divided into High vs. Low A/F (or IC, or IM), there was a significant main effect of A/F (F (1,115) = 6.20, $p < .01$): there was more transactive opposition from High A/F children (M = 5.88, SD = 5.49) than Low A/F (M = 3.82, SD = 3.24);
- There was a significant interaction between IC and gender composition (F (1,115) = 7.47, $p < .01$): only the High IC children in single-sex groups (M = 7.47, SD = 6.45) produced exceptional amounts of transactive opposition, with the Low IC children in single-sex groups (M = 4.28, SD = 4.41) resembling the Low IC (M = 4.60, SD = 4.41) and High IC children (M = 3.29, SD = 2.77) in mixed groups.

Non-transactive

Non-transactive opposition was most frequent in boys, and in the P1 children with low inhibitory control. Gender composition and impulsivity had no bearing on non-transactive opposition. Non-transactive opposition appears to have been promoted by high anger/frustration, but this was probably an artefact of a negative correlation between anger/frustration scores and inhibitory control scores. Socio-metric status may have been relevant at the P3 level, but its consequences were independent of gender and temperament:

- There was a significant main effect of gender (F (1,139) = 5.86, $p < .01$) on non-transactive opposition: the boys (M = 13.48, SD = 8.52) produced roughly 50% more non-transactive oppositions than the girls (M = 9.80, SD = 8.60);
- There was a significant interaction between IC and age (F (1,115) = 4.48, $p < .05$): the P1 children in the High IC group produced fewer non-transactive oppositions (M = 7.00, SD = 5.29) than the P1 children in the Low IC group (M = 11.33, SD = 10.31),

the P3 children in the High IC group (M = 13.76, SD = 9.47), and the P3 children in the Low IC group (M = 11.35, SD = 7.45);

- There was a significant interaction between A/F and age (F (1,115) = 4.19, $p < .05$), with the P1 children in the Low A/F group producing relatively few non-transactive oppositions. However, step-wise regression eliminated A/F, when its negative association with IC was taken into account;
- There was a significant interaction between socio-metric status, age, and gender (F (2,97) = 4.05, $p < .05$). This was primarily due to a tendency, at P3 only, for the rejected children (M = 21.49, SD = 12.23) to produce more non-transactive opposition than the popular (M = 12.11, SD = 6.81) and average (M = 12.34, SD = 8.06) children.

Conclusion

Gender and gender composition are relevant to form of opposition, with boys producing non-transactive opposition with relatively high frequency, and transactive opposition maximised in single-sex groups. Temperament is also relevant, with transactive opposition characteristic of children who are high in both anger/frustration and inhibitory control, and at P1, non-transactive opposition characteristic of children who are low in inhibitory control.

Discussion and Conclusions

Consistent with previous research, opposition has been found to promote the transactive dialogue associated with intellectual growth, and the aggressive behaviour associated with social rejection. However this does not imply unimaginable tension between social and cognitive development: the oppositional encounters during which transactive dialogue occurs are distinct from the oppositional encounters during which aggression occurs, in terms of both the constituent behaviours, and the children who produce them.

The results suggest that transactive dialogue is most frequent when children who are high in A/F and IC find themselves in single-sex groups. This points to the importance of temperament, but suggests that its significance is moderated by context. Temperamental influences have not hitherto been studied in relation to transactive opposition, and in the contexts where they have been studied, high A/F tends to be depicted negatively. Insofar as transactive dialogue has intellectual benefits, the results imply a more favourable gloss on A/F, at least in association with high IC.

It is unclear why the High A/F and High IC combination depended upon single-sex contexts to stimulate transactive responding. It could be that children need the 'comfort' of same sex peers to inhibit non-transactive opposition and substitute transactive, suggesting that non-transactive opposition may be the default option of this age level.

Consistent with earlier studies that focus on aggression, non-transactive opposition was most frequent in boys, and was also promoted by low IC. However, IC was only relevant at P1; at P3 social rejection was a stronger predictor. This could mean that once children are rejected in response to non-transactive opposition (under the influence of temperament and gender), rejection becomes a source of non-transactive opposition in its own right. Longitudinal research could clarify the situation.

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